ARCHEOLOGICAL MONITORING FOR THE INSTALLATION OF THE U. S. NAVY SHIPBOARD ELECTRONIC SYSTEM EVALUATION FACILITY ANTENNA, FORT SUMTER AND FORT MOULTRIE NATIONAL MONUMENT

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MANAGEMENT SUMMARY

Archeological monitoring was conducted by Southeast Archeological Center (SEAC) personnel on August 27, 1987, during the excavation for the installation of a new U. S. Navy Shipboard Electronic System Evaluation Facility antenna. Photographs were taken of the area, the excavation of the antenna pad area was closely examined for any evidence of structures or other cultural features, and any cultural materials discovered in the backdirt piles were collected for analysis at SEAC. Recent historic materials were recovered, but nothing of prehistoric or historic significance was noted. The installation of the antenna did not adversely effect any significant cultural resources.

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Introduction

The U. S. Navy Shipboard Electronic System Evaluation Facility (SESEF) proposed to install a new antenna at the base of Construction 230 (Figure 1), which is within the boundaries of the Fort Sumter and Fort Moultrie National Monument (FOSU). Construction 230 is on the List of Classified Structures and is listed on the National Register of Historic Places as part of the Fort Sumter National Monument. The Southeast Archeological Center (SEAC) was contacted to determine whether or not archeological investigations needed to be conducted prior to construction. Archeological investigations were necessary to comply with the National Historic Preservation Act. It was decided that monitoring would suffice since the probability of encountering significant cultural remains was considered low.

The monitoring took place on August 27, 1987, by SEAC personnel, specifically Archeological Technician Elizabeth Horvath. The project goal was to monitor the construction so that any cultural resources in the zone of impact could be located and identified, and from that information, assess their archeological significance. The following report summarizes the monitoring activities and the related background research.

FORT SUMTER AND FORT MOULTRIE
NATIONAL MONUMENT
Shipboard Electronic System Evaluation
Facility (SESEF) Antenna Installation
ACC. 777

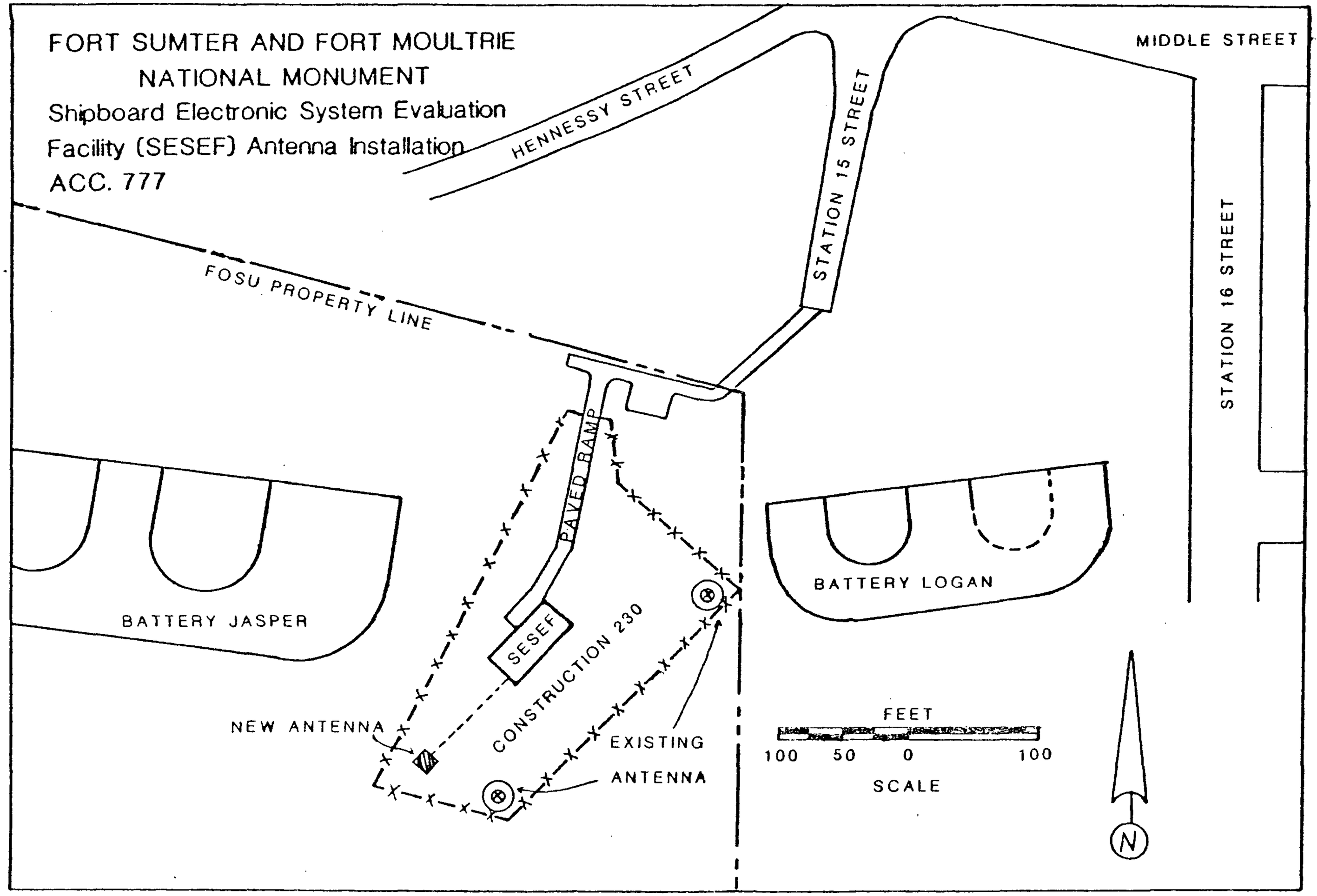


FIGURE 1

Effective Environment

Environmental factors such as climate, geology, topography, elevation, soils and water resources are important in determining where archeological sites are likely to be located. These variables influenced what resources would have been available for exploitation in a given environment as well as what activities the site could be used for. These factors tend to be reflected in settlement and land-use patterns.

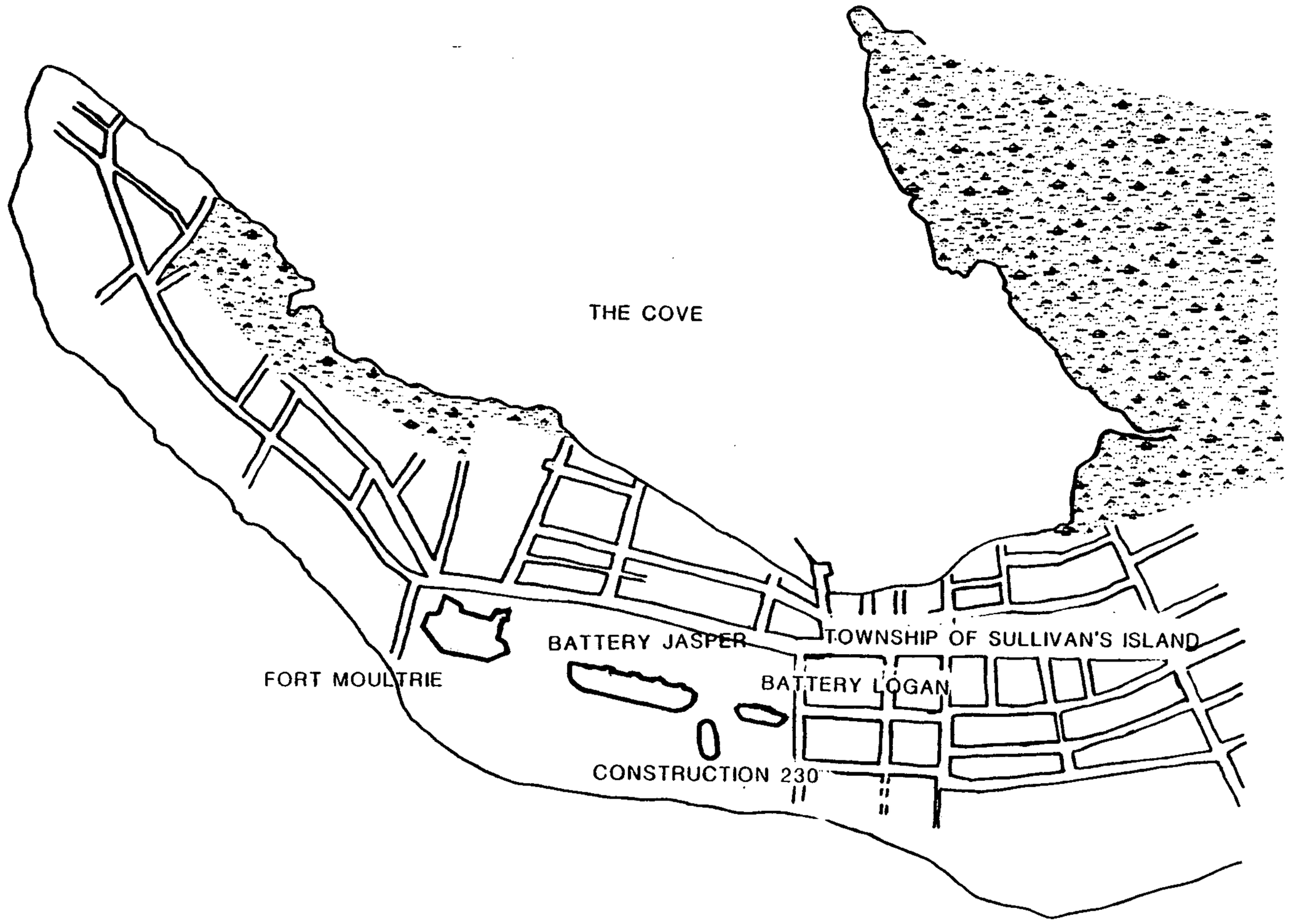
The project area is located on Sullivan's Island (Figure 2), a barrier island off the coast of Charleston, South Carolina. Fort Moultrie is located on a sand spit on the southwest end of the island. The spit was formed and influenced by inlet and littoral currents. Sullivan's Cove is located along the north and east shores of the spit, north of the fort. The cove is shallow and has a tidal marsh along its perimeter. The Intercoastal Waterway is located between the island and the coast.

The southwestern portion of Sullivan's Island has an average height of approximately ten feet above mean sea level and is subject to overwash during major storms. The soils are predominantly beach sands.

FORT SUMTER AND FORT MOULTRIE NATIONAL MONUMENT

General Vicinity Map

Sullivan's Island, South Carolina



CHARLESTON HARBOR

FORT SUMTER

FEET

0 400 800

The climate is mild and temperate with the rainfall fairly well distributed throughout the year. The heaviest rainfalls occur in the summer. Hurricanes can be serious threats during the late summer and early fall months. Hurricanes destroyed the first two Fort Moultries.

Surficial fresh water resources on the island are scarce. An artesian well is located in the vicinity of Battery Jasper.

The Charleston Harbor and Sullivan's Cove area provide an abundance of marine life including crab, oyster and numerous fish species. Numerous avian species also inhabit the Sullivan's Island locale.

Sullivan's Island, in prehistoric and early historic times, would not have been an extremely optimal locale for establishing a permanent residence, especially considering the lack of freshwater. However, it was a good area for short-term exploitation of the marine and estuarine resources. Historically, its location at the mouth of Charleston Harbor made it a prime defensive position for the protection of Charleston from sea based attacks.

Background Research

The evaluation of archeological and historical significance is based upon the potential of a site to contribute to the knowledge of a region's history and prehistory. In order to accomplish this, a site must be considered within the context of the larger regional settlement system. A review of the data concerning other sites in the area is the first step in the examination of settlement and land-use patterns through time. Pertinent archeological and historic resources were used to develop a framework within which to examine any cultural resources discovered as a result of this project.

There are no known prehistoric components on Sullivans Island although the coastal area had been used by prehistoric peoples from the Paleo-Indian period, about 12,000 years ago, until the arrival of the Europeans. Estuaries along the South Carolina coast, like that present around Sullivans Island, contain numerous Late Archaic (2500-500 B.C.) shell middens (Commonwealth Associates, Inc. 1979). Coastal resources continued to be exploited by the later prehistoric people although their subsistence economies became more reliant upon horticulture/agriculture. It is possible that prehistoric cultural resources might have been present

on the Island, but given the amount of disturbance, natural as well as cultural, which has taken place, it is unlikely that in situ deposits are present.

Fort Mountrie I was built in 1776 out of Palmetto logs and sand to protect Charleston Harbor from British attack. It repelled an attempt in 1776, but fell to the British four years later. The fort was severly damaged by a hurricane in 1783 and never repaired. A second Fort Moultrie was constructed in 1794. Built of bricks, palmetto logs,and earth it was destroyed by a hurricane in 1804. Fort Moultrie III was completed five years later. Constructed of brick and located further inland the Fort Moultrie III may have idssuaded the British from attacking Charleston during the War of 1812. From 1814 until 1860, the fort was periodically modified and improved. Seized by the Confederates in 1860, the fort took part in the bombardment of Fort Sumter in April 1861. In the three decades after 1865, Moultrie was improved, modified, and armed. It continued to serve as part of Charleston's harbor defense system. The threat of war with Spain resulted in the construction of Batteries Jasper and Logan east of Fort Moultrie. During World War II, Construction 230 was built between Batteries Jasper and Logan.

Never armed or completed, Construction 230 was first utilized in 1968 when the Shipboard Electronic System Evaluation (SESEF) was built on top of it. Additional modifications on the SESEF facility were made in the two decades that followed, including the current proposal.

Research Design

The archeological and historic literature was examined in order to ascertain what types of cultural resources might be expected within the area to be impacted by the installation of the SESEF antenna. Site location predictive models are based upon the examination and analysis of the distribution of known sites with certain classes of environmental data. Settlement often occurred in the coastal/estuarine environments due to the abundance of exploitable resources. Historically, fortification of an island at the mouth of a harbor would create a good defensive position.

One of the major foci of anthropological research concerning historic and prehistoric settlement is the relationship between human social groups and their environments. Settlement patterns are defined based upon the contextual/functional relationship of the site to its location. The combination of different environmental and ecological factors determined what

types of resources would have been available for human exploitation, which in turn influenced the development of the socio-economic organization framework. Prehistoric settlement-subsistence strategies tended to reflect a least cost/least risk solution for the efficient exploitation of locally available resources (Christenson 1980; Earle 1980). Changes in land-use and resource-use patterns reflect adaptive strategies to the local environment through time.

Certain environmental locales were preferred for prehistoric and historic utilization. Although barrier islands are not the most choice of settlement locales, the abundance of resources located in the general area would have been a positive factor in site selection. Defensively, Sullivan's Island is a prime location for the protection of Charleston Harbor. Thus, the potential for encountering cultural resources on the island was considered high; however, the amount of disturbance which has taken place in the vicinity of the antenna location decreased the likelihood of finding in situ cultural remains.

The types of resources which would be expected in this environmental setting include middens, artifact scatters, hearths, structural remains, and possibly

burials. Midden deposits and artifact scatters can provide a wealth of information on the lifestyles of the people who occupied the area. Avenues of research for this type of resource include subsistence economies, environmental/ecological reconstruction, relative chronologies, site function, artifact use and reuse, seasonality, socio-economic relationships, status differentiation, trade networks, regional influences, technological changes, etc. Hearths, often associated with middens, would provide charcoal remains for radio-carbon dating. Any wood remains could be analyzed by a paleobotanist to determine what species of trees/shrubs were being used. This information could then provide data on the prior vegetational regime of the area.

Structural remains might be expected since several houses were known to have been in the area and, the Fort Moultrie locale has been in use since the 1700s. Types of structural features could include out buildings, walls, privies, residences, cisterns, military related buildings, etc. These would provide information on site utilization/function, events or features not recorded in the records, structures not usually recorded, building techniques and styles, etc.

Burials could be present in the area considering several unknown historic graves were uncovered just north of the fort prior to the construction of the visitor center. Osteological remains can provide data on ancestral origins, stress related factors such as disease, trauma, warfare, etc., diet, demographics, acculturation and socio-economic differences.

Investigation Strategy and Laboratory Analysis

The installation of the SESEF antenna required ground disturbance for the 4' x 6' x 3' (deep) concrete slab, approximately 100' of trench 2' deep for the conduit connecting the antenna to SESEF and a five-point ground system extending 15' from the concrete pad. Photographs of the project area were taken before and after the excavation. The monitoring phase of the project took place on August 27, 1987. This was done so that if cultural materials or features were uncovered, an archeologist would be present to recover the data and make an assessment of whether the remains were of such significance that the excavations should cease and data recovery be conducted.

Excavation for the concrete pad and five-point ground system was done with a backhoe. The excavation began with an area approximately 10' x 10' x 3' deep for the

insertion of the antenna pad form. The hole was then expanded outward to 20' at a more shallow depth for the placement of the five-point ground system which only needed to be 20" below surface. However, during this expansion process, edge of the excavated area collapsed under the weight of the backhoe. This resulted in the backhoe being in the excavated area. After about an hour of maneuvering around, the backhoe extricated itself and the area excavated was roughly 20' across and 3.5' deep. The trench for the conduit was approximately 100' long and averaged about 2' deep, and traversed the Construction 230 slope.

During the excavation, the backdirt was checked for cultural materials. These were collected and all appeared to be of fairly recent origin. No cultural strata or features were noted, although a galvanized water pipe was uncovered. Neither the park nor SESEF knew the pipe was there until it was uncovered. The pipe was cut and removed and did not appear to have been used for some time. The stratigraphy in the antenna hole was roughly 30 cm of brown loamy sand underlain by 60 cm of yellowish-brown sand with shell flecking. Beneath this was an orange-brown clay. The strata in the trench consisted of about 6 cm of brown topsoil underlain by a light brown sand. Near the trench's

intersection with the antenna hole, a small deposit of reddish, sandy clay was uncovered, probably an indication of fill.

The materials collected were bagged and taken back to SEAC for analysis. Here they were water washed, dried and separated into various categories. The cataloging classification consisted of dividing the artifacts into five basic categories - mineral, vegetal, animal, human remains and unidentified. These categories were then subdivided into more specific groupings. This followed the guidelines set forth in the Museum Handbook, Museum Records, Part II. The cataloged data were entered into the Automated National Catalog System. A complete listing of the artifacts collected is provided in the appendix.

Results

The archeological monitoring of the excavation for the installation of the SESEF antenna did not reveal any significant cultural remains or features. The materials collected (see Appendix) from the backdirt piles were primarily associated with the twentieth century activities. These were divided into four basic categories based on function: military, construction, food/beverage and miscellaneous. The miscellaneous

category consist of a few granitic rocks, coal and a piece of plastic.

The construction related materials consist of a 7/8" machine bolt, cut and wire nails, a sewer pipe fragment, brick, concrete, a small concrete block with two wires attached, hardened tar, pane glass and a copper ground wire.

The military related items consist of a .45 caliber bullet, a partial .45 caliber bullet casing, and a .30 caliber bullet casing for an M-1 rifle. The .45 caliber bullet has a World War I contract headstamp indicating manufacture by the Remington Union Metallic Cartridge Company and the .45 caliber partial casing was manufactured by the Peters Cartridge Company at the same time (Hackley et al. 1967:24). The .30 caliber casing has a headstamp of "T W 5 4" and was used during World War II although this type of casing is still being manufactured.

The food and beverage category included a 6 oz. Coca-Cola bottle manufactured in Hamlet, North Carolina some time between 1951 and 1957 (Noel Hume 1980:48), a steel Budweiser beer can with a tab top, four sherds of bottle glass (clear, aqua, brown and clear with an embossed

"..DE.." above "CAPA.."), four bovine rib fragments-one cut, a bovine right calcaneus, and a bovine left distal humerus fragment.

The materials collected seem to have been associated with twentieth century activities in the area, probably from the building of Construction 230 and SESEF. The investigations concluded that the construction activities associated with the installation of the new SESEF antenna did not adversely impact any significant cultural resources.

APPENDIX

CULTURAL MATERIALS COLLECTED DURING THE ARCHEOLOGICAL MONITORING FOR THE SESEF ANTENNA INSTALLATION

Ditch Witch Trench	1 - wire spike 1 - brick fragment 4 - dried tar fragments 1 - black plastic fragment 1 - granitic rock 4 - concrete fragments
Antenna Pad Hole	1 - 7/8" machine bolt - 37.5 cm long 1 - rubber coated copper ground wire - 30.5 cm long 1 - 6 oz. Coca-Cola bottle - Hamlet, N.C. 1951-1957 1 - steel Budweiser beer can - tab top 2 - cut nails 2 - wire nails 1 - brown bottle glass sherd 1 - clear bottle glass sherd 1 - aqua bottle glass sherd 1 - clear bottle glass sherd - "..DE.." above "CAPA.." 1 - brick fragment 4 - bovine rib bone fragments - 1 cut 1 - bovine left distal humerus fragment 1 - bovine right calcaneus 2 - granitic rocks 1 - .45 caliber damaged bullet - "REM-UMC" "18" 1 - .45 caliber bullet casing fragment - "P.C.CO." "17" 1 - .30 caliber casing - M-1 - "T" "W" "5" "4" 2 - coal fragments 1 - concrete block with two wires 8x6x7 cm high 1 - sewer pipe fragment 1 - dried tar fragment

References Cited

Christenson, Andrew L.
1980 Change in the Human Food Niche in Response to Population Growth. In Modeling Change in Prehistoric Subsistence Economies. T. K. Earle and A. L. Christenson, editors. pp. 31-72. Academic Press, New York, New York.

Commonwealth Associates, Inc.
1979 Archeological Testing and Evaluation Cape Romain National Wildlife Refuge. Prepared for Fish and Wildlife Service, U. S. Department of the Interior.

Earle, Timothy K.
1980 A Model of Subsistence Change. In Modeling Change in Prehistoric Subsistence Economies. T. K. Earle and A. L. Christenson, editors. pp. 1-29. Academic Press, New York, New York.

Hackley, Frank W., W. H. Woodin and E. L. Scranton
1967 History of Modern U. S. Military Small Arms Ammunition. Volume 1, 1880-1939. Macmillan, New York, New York.

Noel Hume, Ivor
1980 A Guide to Artifacts of Colonial America. Alfred A. Knopf, New York, New York.

Southeast Regional Office
1974 Final Environmental Statement and Proposed Master Plan and Development Concept Plan, Fort Sumter and Fort Moultrie National Monument. Ms. on file, Southeast Archeological Center, Tallahassee, Florida.